

BHAVANA CK
1BM20CS403
CSE-4A

Program 7 : Book Database

BOOK (Book_id, Title, Publisher_Name, Pub_Year)
BOOK_AUTHORS (Book_id, Author_Name)
PUBLISHER (Name, Address, Phone)
BOOK_COPIES (Book_id, Branch_id, No-of_Copies)
BOOK_LENDING (Book_id, Branch_id, Card_No, Date_Out,
Due_Date)
LIBRARY_BRANCH (Branch_id, Branch_Name, Address)

Write SQL queries to

1. Retrieve details of all books in the library – id, title, name of publisher, authors, number of copies in each branch, etc.
2. Get the particulars of borrowers who have borrowed more than 3 books, but from Jan 2017 to Jun 2017
3. Delete a book in BOOK table. Update the contents of other tables to reflect this data manipulation operation.
4. Partition the BOOK table based on year of publication. Demonstrate its working with a simple query.
5. Create a view of all books and its number of copies that are currently available in the Library.

```
create database bookdb;  
use bookdb;
```

```
create table publisher(  
name varchar(30) not null,  
address varchar(20) ,  
phone varchar(10),  
primary key(name)  
);
```

```
create table book(  
book_id int not null,  
title varchar(20),  
publisher_name varchar(20),  
pub_year varchar(20),  
primary key(book_id),  
foreign key(publisher_name) references publisher(name)  
);
```

```
create table book_authors(  
book_id int not null,  
author_name varchar(30) not null,  
primary key(book_id,author_name),  
foreign key(book_id) references book(book_id)  
);
```

```
create table library_branch(  
branch_id int not null,  
address varchar(20),  
branch_name varchar(20),  
primary key(branch_id)  
);
```

```
create table book_copies(  
book_id int not null,  
branch_id int not null,  
no_of_copies int,  
primary key(book_id,branch_id),  
foreign key(book_id) references book(book_id),  
foreign key(branch_id) references  
library_branch(branch_id)  
);
```

```
create table Card(  
card_no int(10) not null,  
primary key(card_no)  
);
```

```
create table book_lending(  
date_out date,  
due_date date,  
book_id int not null,  
branch_id int not null,  
card_no int not null,  
primary key(book_id,branch_id,card_no),  
foreign key(book_id) references book(book_id),  
foreign key(branch_id) references  
library_branch(branch_id),  
foreign key(card_no) references Card(card_no)  
);
```

```
insert into publisher  
values('MCGRAW-HILL', 'BANGALORE',9989076587),  
( 'PEARSON', 'NEWDELHI', 9889076565),  
( 'RANDOM HOUSE', 'HYDRABAD', 7455679345),  
( 'HACHETTE LIVRE', 'CHENAI', 8970862340),  
( 'GRUPO PLANETA', 'BANGALORE', 7756120238);
```

```
insert into book  
values(1,'DBMS', 'MCGRAW-HILL','JAN-2017'),  
(2,'ADBMS', 'MCGRAW-HILL','JUN-2016'),  
(3,'CN', 'PEARSON','SEP-2016'),  
(4,'CG', 'GRUPO PLANETA','SEP-2015'),  
(5,'OS', 'PEARSON','MAY-2016');
```

```
insert into book_authors  
values(1,'NAVATHE'),  
(2,'NAVATHE'),  
(3,'TANENBAUM'),  
(4,'EDWARD ANGEL'),  
(5,'GALVIN');
```

```
insert into library_branch  
values(10,'RR NAGAR','BANGALORE'),
```

```
(11,'RNSIT','BANGALORE'),  
(12,'RAJAJI NAGAR', 'BANGALORE'),  
(13,'NITTE','MANGALORE'),  
(14,'MANIPAL','UDUPI');
```

```
insert into book_copies  
values( 1, 10,10),  
( 1, 11,5),  
( 2, 12,2),  
( 2, 13,5),  
( 3, 14,7),  
( 5, 10,1),  
( 4, 11,3);
```

```
insert into Card  
values(100),  
(101),  
(102),  
(103),  
(104);
```

```
insert into book_lending  
values('2017-01-01','2017-06-01', 1, 10, 101),  
( '2017-01-01','2017-03-11', 3, 14, 101),  
( '2017-02-21','2017-04-21', 2, 13, 101),  
( '2017-03-15','2017-07-15', 4, 11, 101),  
( '2017-04-12','2017-05-12', 1, 11, 104);
```

-----Retrieve details of all books in the library – id, title, name of publisher, authors, number of copies in each branch, etc.

```
select  
b.book_id,b.title,b.publisher_name,a.author_name,c.no_of_copies,l.branch_id  
from book b,book_authors a,book_copies c,library_branch l  
where b.book_id=a.book_id and b.book_id=c.book_id and  
l.branch_id=c.branch_id;
```

Result Grid						
Filter Rows:						
	book_id	title	publisher_name	author_name	no_of_copies	branch_id
▶	1	DBMS	MCGRRAW-HILL	NAVATHE	10	10
	1	DBMS	MCGRRAW-HILL	NAVATHE	5	11
	2	ADBMS	MCGRRAW-HILL	NAVATHE	2	12
	2	ADBMS	MCGRRAW-HILL	NAVATHE	5	13
	3	CN	PEARSON	TANENBAUM	7	14
	4	CG	GRUPO PLANETA	EDWARD ANGEL	3	11
	5	OS	PEARSON	GALVIN	1	10

-----Get the particulars of borrowers who have borrowed more than 3 books, but from Jan 2017 to Jun 2017

```
select card_no from book_lending
where date_out between '2017-01-01' and '2017-07-01'
group by card_no
having count(*)>3;
```

Result Grid	
	card_no
▶	101

-----Delete a book in BOOK table. Update the contents of other tables to reflect this data manipulation operation.

```
DELETE FROM BOOK
WHERE BOOK_ID=3;
```

```
select * from book;
```

	BOOK_ID	TITLE	PUB_YEAR	PUBLISHER_NAME
▶	1	DBMS	JAN-2017	MCGRRAW-HILL
	2	ADBMS	JUN-2016	MCGRRAW-HILL
	4	CG	SEP-2015	GRUPO PLANETA
	5	OS	MAY-2016	PEARSON
*	NULL	NULL	NULL	NULL

```
select * from book_authors;
```

	AUTHOR_NAME	BOOK_ID
▶	NAVATHE	1
	NAVATHE	2
	EDWARD ANGEL	4
	GALVIN	5
★	NULL	NULL

select * from book_lending;

	DATE_OUT	DUE_DATE	BOOK_ID	BRANCH_ID	CARD_NO
▶	2017-01-01	2017-06-01	1	10	101
	2017-04-12	2017-05-12	1	11	104
	2017-02-21	2017-04-21	2	13	101
	2017-01-17	2017-03-17	3	14	101
	2017-03-15	2017-07-15	4	11	101
★	NULL	NULL	NULL	NULL	NULL

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select * from book_copies;

	NO_OF_COPIES	BOOK_ID	BRANCH_ID
▶	10	1	10
	5	1	11
	2	2	12
	5	2	13
	3	4	11
	1	5	10
★	NULL	NULL	NULL

-----Partition the BOOK table based on year of publication.
Demonstrate its working with a simple query.

CREATE VIEW YEAR_OF_PUBLICATION AS SELECT PUB_YEAR
FROM BOOK;

SELECT * FROM YEAR_OF_PUBLICATION;

Result Grid	
	PUB_YEAR
▶	JAN-2017
	JUN-2016
	SEP-2016
	SEP-2015
	MAY-2016

-----Create a view of all books and its number of copies that are currently available in the Library.

```
CREATE VIEW BOOKS_AVAILABLE_IN_LIBRARY
AS SELECT B.BOOK_ID, B.TITLE, C.NO_OF_COPIES FROM
BOOK B, BOOK_COPIES C, LIBRARY_BRANCH L
WHERE B.BOOK_ID=C.BOOK_ID AND
C.BRANCH_ID=L.BRANCH_ID;
```

```
SELECT * FROM BOOKS_AVAILABLE_IN_LIBRARY;
```

Result Grid			
	BOOK_ID	TITLE	NO_OF_COPI
▶	1	DBMS	10
	1	DBMS	5
	2	ADBMS	2
	2	ADBMS	5
	3	CN	7
	4	CG	3
	5	OS	1